



The Old Barn, Main Street, Flintham

Bat Surveys Report

September 2020



B.A.T. Ecological | www.bat-ecological.co.uk | info@bat-ecological.co.uk | 07870 157022

Report Information:

Report title:	The Old Barn, Main Street, Flintham – Bat Surveys Report, September 2020
Prepared by:	Matt Cook BSc (Hons) MSc MCIEEM
Prepared for:	Aitchison Raffety and Newfield (Farm) Screveton Ltd.
Issued on:	28 September 2020
Document reference:	B.A.T.200901

Disclosure:

This document has been prepared by B.A.T. Ecological Ltd. for the sole use of the commissioning client/s. It has been provided in accordance with the agreed scope and intended purpose and previously stated Terms and Conditions. No other warranty is made as to the professional advice included in this document. It does not purport to give legal advice.

This report should not be copied or relied upon by any third party without the express prior written agreement of B.A.T. Ecological Ltd. and the commissioning client/s.

The evidence gathered, and the opinions provided, have been prepared in accordance with the Chartered Institute of Ecology and Environmental Management Code of Professional Conduct.

Where any appraisal is based upon information provided by third parties, it is assumed that this information is relevant, correct, and complete; there has been no independent verification of information obtained from third parties unless otherwise stated. Where field investigations have been carried out these have been appropriate to the agreed scope of works and carried out to a level of detail required to achieve the stated objectives.



Cover photograph by Dan Cook @ <https://danscape.co/>

Contents

Executive Summary	4
1 Introduction.....	5
1.1 Background	5
1.2 Site Location	5
1.3 Site Description and Context	5
1.4 Building Description	6
2 Relevant Wildlife Legislation and Policy	9
2.1 Legislation - Bats.....	9
2.2 Legislation - Nesting Birds	10
2.3 Relevant Planning Policy – Protected Species	10
3 Methods.....	12
3.1 General.....	12
3.2 Desk Study.....	12
3.3 Daytime Bat Roost Assessment and Inspection.....	12
3.4 Nocturnal Bat Surveys	13
3.5 Nesting Birds	15
3.6 Personnel	15
3.7 Equipment.....	15
4 Results.....	16
4.1 Desk Study.....	16
4.2 Daytime Bat Roost Assessment and Inspection.....	16
4.3 Nocturnal Bat Surveys	17
4.4 Nesting Birds	19
5 Evaluation.....	20
6 Conclusions and Recommendations	21
Appendix 1: Photographs.....	23
Appendix 2: Annotated Plan.....	25
Appendix 3: Nocturnal Survey Results	26

Executive Summary

This report presents the findings of a suite of bat surveys of The Old Barn, Main Street, Flintham, Nottinghamshire, NG23 5LR, which is hereafter referred to interchangeably as ‘the barn’ or ‘the building’, on ‘the site’. The site is located [here](#). The central Ordnance Survey Grid Reference of the barn is SK 74247 45972.

The bat surveys were undertaken to inform proposed renovations of the barn as part of a planning application to redevelop the site. The primary objective of the suite of bat surveys was to determine the presence or likely absence of a bat roost within the building because any such bat roost would be both protected by law and a Material Consideration according to planning policy. For similar reasons, any observations of nesting birds are also reported.

This appraisal has been completed by Matt Cook BSc (Hons) MSc MCIEEM, who is an experienced and suitably qualified ecologist licensed to an advanced level by Natural England to undertake professional bat surveys. The assessment was undertaken in accordance with current best practice guidance for professional bat surveys - Collins (ed.) 2016 – and appropriate survey equipment has been used.

Appendix 1 shows photographs of the key findings from the bat roost assessment and inspection. Appendix 2 shows the location of these key findings based on the existing plans of the site.

The surveys concluded that the building supports a night roost and a feeding perch for one brown long-eared bat, and a day roost for one common pipistrelle.

As a result of the above findings a European Protected Species mitigation licence will be required from Natural England to facilitate the proposed redevelopment of the barn. Given the low number of bats and low conservation status of the bat roosts identified, the bat mitigation work could be managed by an experienced Natural England Bat Mitigation Class Licence (BMCL) Registered Consultant.

Planning consent must usually be in place (with all applicable wildlife conditions discharged) before a mitigation licence can be acquired from Natural England.

The licensed renovations of the building should be programmed for April through October to reduce the risk of disturbing bats during their winter hibernation. The licensed mitigation strategy for the works will also need to ensure that no bats are harmed during the renovations, with work in areas of high risk to bats attended by the Named Ecologist or Registered Consultant on the licence (or their Accredited Agent).

There were no birds observed nesting within the building during the site visits on 17 July, 30 July, and 18 August 2020, however the building could support nesting birds at other times from March to September annually.

In order to provide an overall net gain for biodiversity post-development, in line with current planning policy (see Section 2.3), it is highly recommended that bat roosting and bird nesting habitat is incorporated into the proposals for this site. Given the presence of two bat roosts on the site currently, it is recommended that three bat bricks or tiles are provided on the site to deliver an overall net gain in available roost habitat for bats. These bat bricks or tiles should be suitable for Pipistrelle bats and brown long-eared bats. They should also be incorporated into the design and fabric of the renovated barn to ensure that bat roost habitat is retained on the site in perpetuity. At least two bird nest boxes should also be incorporated into the design of the site to provide a net gain for this taxa.

If the proposed renovations of this building have not commenced within two years of the date of this report then it is recommended that an updated ecological assessment should be undertaken.

1 Introduction

1.1 Background

- 1.1.1 This report presents the findings of a suite of bat surveys of The Old Barn, Main Street, Flintham, Nottinghamshire, NG23 5LR, which is hereafter referred to interchangeably as ‘the barn’ or ‘the building’, on ‘the site’.
- 1.1.2 The bat surveys were undertaken to inform proposed renovations of this barn as part of a planning application to redevelop the site. The primary objective of the suite of bat surveys was to determine the presence or likely absence of a bat roost within the building because any such bat roost would be both protected by law and a Material Consideration according to planning policy. For similar reasons, any observations of nesting birds are also reported. See Section 2 - Relevant Wildlife Legislation and Policy – for more information.

1.2 Site Location

- 1.2.1 The blue polygon in Figure 1.1 shows the barn that was subject to the bat surveys, which is located [here](#). The red polygon in Figure 1.1 depicts the site boundary. The central Ordnance Survey Grid Reference (OSGR) of the barn is SK 74247 45972.



Figure 1.1: The location of the site (red polygon) and the surveyed building (blue polygon) on Spring Lane, Flintham. Image reproduced from Google Earth, 2020 (imagery date 1/1/2010).

- 1.2.2 The site is located in central Flintham, a rural village in the Rushcliffe Borough of Nottinghamshire. The nearest towns to Flintham are Bingham and Newark, Nottinghamshire, which are c.7 km to the south-west and c.9 km to the north-east of Flintham, respectively.

1.3 Site Description and Context

- 1.3.1 The standalone barn is located near to the northern boundary of the small site; it is set back from Main Street and within a few metres of Woods Lane. The dwelling and most of the other outbuildings on the site are located along its western boundary, except for a wood store in the north-east corner. A modest garden comprises the south-east corner of the site, where the site abuts both Main Street and Woods Lane. The remaining areas on the site comprise hardstanding, or gravel paths and the driveway.

- 1.3.2 Flintham is predominantly surrounded by open countryside, with the wooded areas, parkland, and ornamental lake of the main Flintham Estate to the north-west, west, and south-west of the village, respectively. The wider countryside around Flintham is dominated by arable fields, which are bordered by hedgerows, many of which are mature with established trees, and lines of trees. There are also several small woodland copses and streams in the landscape around Flintham, and the River Trent is c.2.5km to the west of the village.

1.4 Building Description

- 1.4.1 The surveyed building is shown in Photographs 1.1 to 1.5. It comprises a small barn constructed from solid brick walls. The barn has two doors, opposite each other on the north and south elevations, and no windows. The two gables and the southern elevation of the building are all at least partially obscured by shrubs and climbing plants.
- 1.4.2 The cut and pitched, timber-framed roof of the building is covered with clay pantiles, which are underlined with bitumen roofing felt. This overlaps the central ridge board below the clay ridge tiles set in mortar. The roof has no finishing fascias, soffits, or barge boards. The verges also comprise mortar.
- 1.4.3 Internally, the barn is vaulted to the roof. The western half of the building is partitioned into two parts by a timber framed wall (see photograph 1.4) and above this is a mezzanine hayloft (see photograph 1.5). The barn is primarily used for storage and as a workshop.

Photograph 1.1: The southern elevation of the surveyed barn viewed from the driveway.



Photograph 1.2: The northern elevation of the barn, viewed facing west.



Photograph 1.3: The western gable of the barn.



Photograph 1.4: Internal view of the partitioned western half of the ground floor of the barn, below the hayloft shown in photograph 1.5.



Photograph 1.5: Internal view of the mezzanine hayloft in the western half of the building, above the area shown in photograph 1.4 above, and the roof structure.



2 Relevant Wildlife Legislation¹ and Policy

2.1 Legislation - Bats

- 2.1.1 Annex IV of the EC Habitats Directive (Council Directive 92/43/EEC 1992 on the conservation of natural habitats and of wild fauna and flora) lists animal and plant species of Community interest in need of strict protection across member states, which includes all bat species (and their habitats). The EC Habitats Directive is transposed into law in England and Wales via The Conservation of Habitats and Species Regulations 2017, now in combination with The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 until the end of 2020. This legislation is usually referred to as the 'Habitats Regulations'. As a result of this legislation all UK bats are (currently) considered European Protected Species (EPS).
- 2.1.2 In addition to EU regulations, all bats and their habitats are also protected by UK law under the Wildlife and Countryside Act 1981 (as amended), which was reinforced in England and Wales by the Countryside and Rights of Way Act 2000.
- 2.1.3 In combination, the above legislation currently makes it an offence to:
- Deliberately capture, injure, or kill a bat.
 - Deliberately disturb any bat; in particular, any disturbance which is likely to (i) impair a bats' ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or (ii) to affect significantly the local distribution or abundance of the species to which they belong.
 - To be in possession or control of any live or dead bat or any part of, or anything derived from a bat.
 - Damage or destroy a breeding site or resting place of a bat.
 - Intentionally or recklessly obstruct access to any place that a bat uses for shelter or protection; and / or,
 - Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.
- 2.1.4 Note that *damaging or destroying* a place used by a bat for breeding or resting anywhere in the UK is an *absolute offence* carrying *strict liability* under the Habitats Regulations. This means that no element of intent, reckless, or deliberate action needs to be evidenced to establish guilt; the prosecution only needs to demonstrate that the accused performed the prohibited act.
- 2.1.5 The term 'roost' is not used in the above legislation, however, a site that a bat uses for breeding, resting, shelter or protection is called a roost in ecological terms. Bats tend to re-use the same roost sites and sometimes over many years but may not always be in residence. Current legal opinion is that a roost is protected irrespective of whether the bats are present.
- 2.1.6 As a result of the above legislation, where work will result in any destruction, damage or obstruction of any bat roost, whether occupied or not, or risks harming or disturbing bats, then an EPS Mitigation Licence (EPSML, often also called a development licence) is required from the Statutory Nature Conservation Body (e.g. Natural England) before such work can proceed.

¹ This legislation is applicable at the time of writing, following the UK's withdrawal from the European Union on 31 January 2020 but prior to the end of the transition period on 31 December 2020.

2.1.7 In determining whether to grant a licence for an activity affecting EPS Natural England must apply the requirements of Regulation 53 of the Habitats Regulations, and, in particular, apply the following three tests set out in sub-paragraphs (2)(e), (9)(a) and (9)(b):

1. Regulation 53(2)(e) states that: a licence can [only] be granted for the purposes of *“preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”*;
2. Regulation 53(9)(a) states that the appropriate authority (i.e. Natural England) shall not grant a licence unless they are satisfied *“that there is no satisfactory alternative”* to the proposed actions; and,
3. Regulation 53(9)(b) states that the appropriate authority shall not grant a licence unless they are satisfied *“that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”*.

2.1.8 These three tests are commonly referred to as the ‘Purpose Test’, the ‘NSA Test’ and the ‘FCS Test’ respectively.

2.2 Legislation - Nesting Birds

2.2.1 All species of bird are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). This protection was extended by the Countryside & Rights of Way Act, 2000. This legislation makes it an offence to:

- Kill, injure, or take any wild bird.
- Take, damage, or destroy the nest of any wild bird while that nest is in use or being built; and / or,
- Take or destroy an egg of any wild bird.

2.2.2 In addition to the above, certain species of bird are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and receive protection under Sections 1(4) and 1(5) of this Act. This protection was extended by the Countryside & Rights of Way Act, 2000. This legislation confers special penalties where the above offences are committed for any such bird and it also makes it an offence to intentionally or recklessly:

- Disturb any such bird, while building its nest or it is in or near a nest containing dependant young; and / or,
- Disturb the dependant young of such a bird.

2.3 Relevant Planning Policy – Protected Species

2.3.1 In 2005, ODPM (Office of the Deputy Prime Minister) Circular 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the Planning System stated that *“the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat”*. It also stated that it is *“essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision”*.

2.3.2 In 2006, Section 40 (S40) of the Natural Environment and Rural Communities (NERC) Act 2006 placed a duty on every public authority to have due regard to conserving biodiversity. Furthermore, Section 41 (S41) of this Act required the Secretary of State to publish a list of

the living organisms and types of habitats that are of 'Principal Importance' for the purpose of conserving biodiversity, and the Secretary of State must then take steps, as appear reasonably practicable, to further the conservation of the living organisms and habitats in any list published under this Section. The list of Species of Principal Importance currently includes 943 species, including seven bat species and 49 bird species, and the list of Habitats of Principal Importance currently includes 56 habitat types.

- 2.3.3 More recently (2012 and updated in 2018 and 2019) the National Planning Policy Framework (NPPF) has been introduced to help deliver sustainable development in the UK, and environmental objectives comprise one of three key elements within this policy framework. The NPPF includes a range of statements and policies intended to contribute to conserving and enhancing our natural and local environment (primarily chapter 15), including the protection and enhancement of biodiversity by, for example, minimising impacts on and providing net gains for it, and by promoting the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species.
- 2.3.4 In addition to the above, paragraph 016 of the National Planning Practice Guidance (NPPG): Natural Environment – Biodiversity and Ecosystems also provides guidance on how biodiversity should be considered in preparing a planning application. Among other things this guidance states that information on biodiversity impacts and opportunities should inform all stages of development (such as site selection and design, any pre-application consultation, and the application itself); that an ecological survey will be necessary in advance of a planning application if the type and location of development are such that the impact on biodiversity may be significant and existing information is lacking or inadequate (pre-application discussion can help scope whether this is the case and, if so, the survey work required); and that where an Environmental Impact Assessment is not needed it might still be appropriate to undertake an ecological survey, for example, where protected species may be present. The NPPG also states however, that local planning authorities should only require ecological surveys where clearly justified (for example if they consider that there is a reasonable likelihood of a protected species being present and affected by development) and that such assessments should be proportionate to the nature and scale of the development proposed and the likely impact on biodiversity. The NPPG recommends that planning conditions, legal agreements or undertakings may be appropriate in order to provide for monitoring and/or biodiversity management plans where these are needed.
- 2.3.5 In 2019 the UK Government announced that, via Defra (the Department for Environment, Food and Rural Affairs) and the 2020 Environment Bill, it would mandate all development in England to deliver net gains for biodiversity. Biodiversity Net Gain (BNG) is intended to ensure that all development leaves biodiversity in a better state than before, and as such it is hoped that the current loss of biodiversity through development will be halted and ecological networks can be restored. The fundamental principle of BNG is that where a development has an impact on biodiversity planning consent should now only be given if the project increases levels of biodiversity present on a site by providing appropriate natural habitat and ecological features.
- 2.3.6 The UK Government (Defra) provides standing advice for local planning authorities to assess the impacts of development on legally protected species, which can be viewed [here](#).

3 Methods

3.1 General

3.1.1 The bat surveys of the target building were undertaken in accordance with Collins, J (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London. This is widely considered best practice guidance regarding professional bat surveys. As such, it should be referenced by all professional ecologists, developers, planners, and policy-makers responsible for reviewing and assessing the implications of professional bat surveys.

3.2 Desk Study

3.2.1 Using an eight-figure centroid OSGR for the barn of SK 7424 4596, a search of the Natural England Multi-Agency Geographic Information for the Countryside (MAGIC) web portal was undertaken for:

- Any statutory designated sites of nature conservation importance where bats are mentioned in their citations or qualifying criteria within a 2 km radius of the site i.e. Sites of Special Scientific Interest, Local or National Nature Reserves, or Special Areas of Conservation; and,
- Any EPSM licences issued for bats within 2 km of the site since 2008.

3.2.2 In addition to the above, Nottinghamshire Bat Group was consulted for information on bat records and any Local Wildlife Sites (LWS) designated for their special bat assemblage in the area around Flintham.

3.2.3 Aerial images (Google Earth) and OS maps were also reviewed to assess the value of the habitats surrounding the site for roosting, foraging, and commuting bats.

3.3 Daytime Bat Roost Assessment and Inspection

3.3.1 The principle aims of the initial site visit were to assess the suitability of the target building for roosting bats, and to undertake a search for any evidence of their presence to support this appraisal.

3.3.2 The initial site visit was also intended to provide a platform for deciding whether further bat surveys of the target building were required in line with the above professional bat survey guidance (Collins (ed.) 2016), and the best approach to the surveys if they were required.

3.3.3 It is important to note here that a lack of confirmed bat evidence on an initial daytime bat survey does not necessarily mean that there are no bats; many buildings provide suitable bat roost habitat in concealed or inaccessible features (e.g. under roof tiles or within soffit boxes) and bats also use buildings seasonally or transiently. As such, some bat roosts can be exceptionally difficult to detect on a single daytime survey visit.

3.3.4 For the bat roost suitability assessment Collins (ed.) 2016 requires a category from Table 3.1 to be assigned to the target building (or tree). This category then dictates whether nocturnal surveys should follow-on, and the appropriate level of survey effort if they are required – see Section 3.5 below.

Table 3.1: Guidelines for assessing the potential suitability of proposed development sites for roosting bats based on the presence of habitat features, to be applied using professional judgement. Table adapted from Collins (ed.) 2016 (Table 4.1, p.35).

Suitability	Description
Negligible	A structure or tree with negligible habitat / roosting features likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ¹ , and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential ² .
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ¹ and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

¹ For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

² This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (British Standards Institute, 2015).

- 3.3.5 A bat roost assessment and inspection of the building was completed on 17 July 2020 by Matt Cook BSc (Hons) MSc MCIEEM, an experienced bat ecologist who is licensed to an advanced level by Natural England to undertake professional bat surveys - see Personnel.
- 3.3.6 The surveyor appraised the target building for its potential suitability for roosting bats on this survey visit based on the presence (or absence) of features where bats might roost, or access or egress a roost. Such building features typically include, but are not limited to; apertures beneath roof tiles, ridge tiles and lead flashing; cavities in masonry including missing mortar; accessible soffit boxes and roof voids; roosting opportunities behind cladding, barge boards and fascias; and recesses around window and door frames including around lintels.
- 3.3.7 The inspection of the building comprised a thorough search of all accessible internal areas and external building surfaces for evidence of roosting bats, which typically includes bat droppings, the remains of prey (such as moth wings), characteristic staining from urine or fur, a distinctive smell, and / or the presence of live or dead bats.

3.4 Nocturnal Bat Surveys

- 3.4.1 Following on from the initial bat roost assessment and inspection, in accordance with Collins (ed.) 2016, the level of nocturnal survey effort must reflect the potential suitability of the target building for bats as it is categorised by the experienced bat ecologist in reference to Table 3.1 above. The level of nocturnal survey effort that is recommended to give confidence in the survey result for structures should align with both this categorisation and Table 3.2.

Table 3.2: Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures. Table adapted from Collins (ed.) 2016 (Table 7.3, p.52).

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey ¹ .	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.

¹ Multiple survey visits should be spread out to sample as much of the recommended survey period as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk survey is considered only one visit.

- 3.5.1 Based on the initial assessment that the target building provides moderate potential suitability for roosting bats – see Section 4.2 - two dusk emergence surveys of the building were originally proposed. However, on the first of these nocturnal surveys a brown long-eared bat *Plecotus auritus* was recorded accessing the barn to roost – see Section 4.3 – and therefore an additional nocturnal survey was programmed. Collins (ed.) 2016 recommends that three nocturnal surveys are completed in order to characterise a roost.
- 3.5.2 The nocturnal surveys were carried out at least two weeks apart, were within the optimum period for bat activity surveys of May to August (incl.) annually, and they commenced 15 minutes before sunset and continued for at least 1.5 hours. Table 3.3 shows the timings for the nocturnal surveys at the site.

Table 3.3: Survey dates and timings for the nocturnal surveys conducted at the site in 2020.

Date	Sunset / Sunrise Time	Civil Twilight Onset / Ends	Survey Start Time	Survey End Time	Survey Duration
17 July	21:19	22:06	21:04	23:11	2 hrs 7 mins
30 July	05:19	04:36	03:19	05:19	2 hrs
18 August	20:23	21:02	20:08	22:08	2 hrs

- 3.5.3 The emergence surveys involved an experienced surveyor – see Section 3.6 – and up to three advanced infra-red surveillance units with accompanying bat detectors – see Section 3.7 - monitoring the building for any bat activity which might indicate that bats roost within it. The surveyor recorded key information regarding bat activity on the site, such as timings, number of bats and species, and activity patterns, with a particular focus on any bat activity associated with the target building.
- 3.5.4 The weather conditions throughout the nocturnal surveys were conducive for bat activity being dry, mild, and calm. Table 3.4 shows the weather conditions for the nocturnal surveys.

Table 3.4: Weather conditions for the nocturnal surveys conducted at the site in 2020

Date	Air Temperature Start / Finish (°C)	Cloud Cover Start / Finish (approx. %)	Precipitation	Wind Strength (Beaufort Scale)
17 July	22 / 20	40 / 60	None	3-4

30 July	16 / 15	>95	None	0-1
18 August	20 / 18	20 / 10	None (but previous showers)	1-2

3.5 Nesting Birds

- 3.5.1 During the above site visits on in July and August 2020 any evidence of nesting bird activity within the building was also recorded; for example, any active or old nests, any accumulations of droppings, any regurgitated pellets or prey items, and / or any dead nestlings.

3.6 Personnel

- 3.6.1 All field surveys were undertaken by Matt Cook BSc (Hons) MSc MCIEEM, who also authored this report. Matt has been a professional ecologist for over 12 years and has been licensed by Natural England to undertake professional bat surveys for over ten years. Matt was awarded Full Membership of the Chartered Institute of Ecology and Environmental Management (CIEEM) in 2013 and in 2014 Matt was licensed by Natural England to an advanced level to undertake professional bat surveys (Class licence levels 3 and 4, licence references 2015-10167-CLS-CLS and 2015-10176-CLS-CLS). In a voluntary capacity Matt is also a (Level 2) Volunteer Bat Roost Visitor and Trainer on behalf of Natural England.
- 3.6.2 During his time as a professional bat ecologist Matt has undertaken and led innumerable professional bat surveys. He has also been the Named Ecologist on multiple EPSM licenses issued by Natural England for development purposes affecting bat roosts, for different species and of differing conservation importance in various buildings and structures, including several with listed status. In 2017 Matt acquired the Natural England Bat Low Impact / Mitigation Class Licence as well as the specialist Bats in Churches Class Licence.

3.7 Equipment

- 3.7.1 Equipment used for the daytime assessment and inspection comprised a combination of the following: a high-powered Cluson Clulite CB2 torch, a 450 lumen Lenser P7 LED hand-torch, close-focusing Nikon binoculars, a Ridgid Seesnake CA-300 endoscope, and an iPad and Panasonic Lumix digital camera for notes and photographs.
- 3.7.2 Advanced infra-red reflectance recording and illumination equipment was integral to the efficacy of the nocturnal surveys. Two units were used on all surveys to ensure complete surveillance of the building in darkness. These comprised one Canon XA-30 camera and one Canon XA-11 camera, both in infra-red mode, and each illuminated by an adjustable Dedolight IRedzilla infra-red light. On the third nocturnal survey a Panasonic HC-VX980 was also deployed inside the barn in infra-red recording mode, illuminated by an infra-red floodlight.
- 3.7.3 Bat detecting equipment used on the nocturnal surveys comprised two Elekon Batlogger M full spectrum bat detectors, and an Anabat Scout full spectrum unit. Bat call analysis software used comprised Elekon BatExplorer and Anabat Insight.

4 Results

4.1 Desk Study

- 4.1.1 There are no statutorily designated sites listed on MAGIC within 2 km of the site.
- 4.1.2 The MAGIC search returned one record of an EPSM licence issued by Natural England within 2 km of the site. This is located c.1 km to the north-west of it. This licence covered the period 7 October 2009 to 30 April 2010 and permitted the destruction of a breeding site for common pipistrelle *Pipistrellus pipistrellus*. The Natural England case reference for this licence is EPSM2009-1221.
- 4.1.3 It is understood from NBG that the main area of the Flintham Estate, to the west of the village, has recently been designated as a LWS because of its special bat assemblage; 11 of the 12 bat species recorded within Nottinghamshire frequent the Estate.
- 4.1.4 NBG currently hold 528 bat records of 11 species for the Flintham area, of which 504 have been provided to them by the author of this report. Bat survey and research work undertaken by the report author on the Flintham Estate over recent years has identified that the following nine bat species breed locally to Flintham: Daubenton's bat *Myotis daubentonii*, Brandt's bat *M. brandtii*, whiskered bat *M. mystacinus*, Natterer's bat *M. nattereri*, Leisler's bat *Nyctalus leisleri*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P. pygmaeus*, brown long-eared bat *Plecotus auritus*, and barbastelle *Barbastella barbastellus*. In addition, noctule *N. noctula* is known to breed in the wider landscape around Flintham, and Nathusius' pipistrelle *P. nathusii* frequents the area around the village at least occasionally.
- 4.1.5 There are few records of roosting bats in the village of Flintham itself. It can be assumed, however, that at least some of the species listed above with a propensity to roost in buildings - Brandt's bat, whiskered bat, Natterer's bat, common pipistrelle, soprano pipistrelle and brown long-eared bat - will reside in some of the village properties.
- 4.1.6 The village of Flintham and the surrounding rural landscape supports the following habitats that will be important for roosting, foraging, and commuting bats:
- Old farm buildings and dwellings
 - Broadleaved and mixed woodland (including several small copses)
 - An ornamental lake, ponds, streams, and wooded riparian habitat
 - Established hedgerows (many with mature trees) and scrub
 - Parkland
 - Mature gardens
 - Scattered trees and tree lines

4.2 Daytime Bat Roost Assessment and Inspection

- 4.2.1 Appendix 1 shows photographs of the key findings from the bat roost assessment and inspection. Appendix 2 shows the location of these key findings based on the existing plans of the site.
- 4.2.2 There were no bat droppings identified during the daytime roost inspection of the building. A single wing from a large yellow underwing moth *Noctua pronuba* was present on the floor inside the barn near the eastern wall – see Appendix 1, Photograph 4 and Appendix 2, TN 10. Large yellow underwing moths are a favoured prey item of the brown long-eared bat *Plecotus*

auritus and the discarded unpalatable wings of this moth can often indicate the presence of a feeding roost for this bat species.

4.2.3 The daytime bat roost assessment identified external building features that could potentially be exploited by low numbers of roosting bats, apertures that bats might use to access the internal spaces of the building, and internal features that low numbers of bats might use for roosting were they to gain access inside the barn. Principally, these features comprise the following:

- Small gaps beneath and between many of the interlocking pantiles covering both elevations of the pitched roof including along the eaves – see Appendix 1, Photograph 1, and Appendix 2, Target Note (TN) 1.
- Small cracks and crevices associated with the bedding mortar below the ridge tiles – see Appendix 1, Photograph 1, and Appendix 2, TN 2.
- Small subsidence cracks, and apertures in the brickwork due to missing mortar - see Appendix 1, Photographs 2 and 3, and Appendix 2, TN 3 and TN 5.
- There are several apertures that could provide access into the building for bats to roost internally. In particular, the door on the southern elevation is usually left open including at night. There are also gaps around the doors where they are not flush to the surrounding brickwork – see Appendix 1, Photographs 2 and 3, and Appendix 2, TN 4 and TN 6
- Inside the building there are a few features where individual or low numbers of bats could conceivably roost. These principally comprise recesses where roof timbers join, small fissures within larger beams, and apertures on the tops of walls – see Appendix 1, Photograph 5, and Appendix 2, TN 7, TN 8 and TN 9.

4.2.4 Overall, prior to the commencement of the nocturnal surveys, it was considered from the initial daytime assessment that if the building were to support roosting bats it is likely to support low numbers of these animals. As such, the building was considered to provide *moderate* potential suitability for roosting bats in accordance with Collins (ed.) 2016 and Table 3.1 above i.e. the building is “*a structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but is unlikely to support a roost of high conservation status*”.

4.3 Nocturnal Bat Surveys

Summary

4.2.5 Two bats were recorded using the barn during the suite of nocturnal surveys undertaken in the summer of 2020: one brown long-eared bat was recorded briefly accessing the barn interior via the south-facing door during the nocturnal survey on 17 July, and one common pipistrelle was recorded emerging from a small cavity in the brickwork near the south-facing verge of the eastern gable on 18 August.

17 July 2020

4.2.6 Appendix 3, Tables 3.1 and 3.2 provide detailed information on the bat activity (commuting, foraging, and socialising) detected during this survey.

4.2.7 The first bat activity detected on this survey comprised two common pipistrelle passes recorded in quick succession at 21:37, which were heard but not seen near Woods Lane. This activity was timed at 18 minutes after sunset and 29 minutes before civil twilight.

- 4.2.8 At 22:02 on this survey, a brown long-eared bat was recorded on the infra-red camera entering the barn via the open doorway on the southern elevation. This was timed at 43 minutes after sunset and four minutes before civil twilight. The bat arrived from a north-easterly direction around the eastern gable. The same bat was recorded exiting the same doorway approximately two minutes later. It flew away from the building in a southerly direction.

Photograph 4.1: A screenshot of the infra-red footage which captured the brown long-eared bat entering and exiting the barn on 17 July.



- 4.2.9 A brown long-eared bat was also recorded at 22:21 on the automated bat detector deployed with the infra-red camera positioned to the south of the barn. This was timed at 61 minutes after sunset and 15 minutes after civil twilight.
- 4.2.10 Bat activity on this survey was dominated by common pipistrelle passes, with soprano pipistrelle also recorded on occasion. Bats of these species broadly commuted in a north-south direction near the eastern boundary of the site and often along Woods Lane. A common pipistrelle was briefly recorded foraging over the garden of the site.

30 July 2020

- 4.2.11 Appendix 3, Table 3.3 provides detailed information on the bat activity detected during this survey.
- 4.2.12 The first bat activity recorded on this survey comprised three common pipistrelle passes detected at 03:27, which were heard but not seen near the eastern boundary of the site. This activity was timed at one hour and 52 minutes before sunrise and one hour and nine minutes before civil twilight ended.
- 4.2.13 No bat activity was recorded on this survey that was obviously associated with the building, and no bat activity was detected inside the barn.
- 4.2.14 Bat activity on this survey comprised 18 common pipistrelle passes including a low number of social calls. No other bat species were detected. The amount of bat activity on this survey was lower than on the other nocturnal surveys. The general pattern of observable bat behaviour comprised a low number of common pipistrelles commuting south to north over the site and along Woods Lane.

18 August 2020

- 4.2.15 Appendix 3, Tables 3.4 and 3.5 provide detailed information on the bat activity detected during this survey.
- 4.2.16 The first bat activity recorded on this survey comprised a common pipistrelle emerging from a roost in the target building at 20:44. This activity was timed at 21 minutes after sunset and 18 minutes before civil twilight.
- 4.2.17 The common pipistrelle was recorded emerging from a small cavity in the brickwork of the barn, near the south-facing verge of the eastern gable – see Appendix 1, Photograph 2. No other bat activity was recorded on this survey that was obviously associated with the building, and no bat activity was detected inside the barn.
- 4.2.18 The amount of bat activity on this survey was higher than on the other nocturnal surveys. Activity was again dominated by common pipistrelle passes, with soprano pipistrelle and noctule also recorded on occasion. The Pipistrelle bats broadly commuted in a north-south direction near the eastern boundary of the site and often along Woods Lane. A common pipistrelle was also recorded foraging over the garden of the site and social calling for a short period. The noctule passes were high above the site.

4.4 Nesting Birds

- 4.3.1 There were no birds observed nesting within the building during the site visits on 17 July, 30 July, or 18 August 2020. There was one old nest apparent on the brickwork immediately inside-left of the south-facing door frame - see Appendix 2, Target Note 11.
- 4.3.2 There are several features within the fabric of the barn which nesting birds might occupy in any given breeding season; for example, among the roof timbers and on top of walls, especially given that the main barn door is left open, and relatively large recesses in the brickwork on the northern elevation of the building, which are typically unsuitable for roosting bats. The shrubs and climbing plants that are attached to the building on its eastern, southern, and western elevations also provide suitable nesting habitat for some bird species.

5 Evaluation

- 5.1.1 This appraisal has been completed by Matt Cook BSc (Hons) MSc MCIEEM, who is an experienced and suitably qualified ecologist licensed to an advanced level by Natural England to undertake professional bat surveys.
- 5.1.2 The assessment was undertaken in accordance with current best practice guidance for professional bat surveys - Collins (ed.) 2016 – and appropriate (advanced) survey equipment has been used on all surveys.
- 5.1.3 Overall therefore, every effort has been made during this study to provide a comprehensive ecological assessment pertaining to bats (and nesting birds) in the context of the commissioned scope of works and the proposals for the site, including an evaluation of the appraisal methods employed. As such, it is considered that the level of survey effort undertaken here is sufficiently robust to provide confidence in the findings and recommendations contained within this report.
- 5.1.4 It remains important to note that no investigation can ensure the complete characterisation and prediction of the natural environment - all habitat types are subject to change and species may colonise or vacate areas after surveys have taken place - and therefore the results, conclusions and recommendations within any ecological report may consequently become less reliable over time.

6 Conclusions and Recommendations

- 6.1.1 There were no bat droppings identified during the daytime roost inspection of the building on 17 July 2020, however, a single wing from a large yellow underwing moth was present on the floor inside the barn. Large yellow underwing moths are a favoured prey item of the brown long-eared bat and the discarded unpalatable wings of this moth can often indicate the presence of a feeding roost for this bat species.
- 6.1.2 The initial bat roost assessment concluded that the building provided *moderate potential* suitability for roosting bats according to Collins (ed.) 2016 i.e. the building is *“a structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but is unlikely to support a roost of high conservation status”*.
- 6.1.3 Following on from the initial bat roost assessment and inspection a suite of three nocturnal surveys of the building were completed in 2020, during the optimal summer bat activity survey window: two bats were recorded using the barn during these surveys: one brown long-eared bat was recorded briefly accessing the barn interior via the south-facing door during the nocturnal survey on 17 July, and one common pipistrelle was recorded emerging from a small cavity in the brickwork near the south-facing verge of the eastern gable on 18 August.
- 6.1.4 The bat surveys concluded that the building supports a night roost and a feeding perch for one brown long-eared bat, and a day roost for one common pipistrelle.
- 6.1.5 As a result of the above findings an EPS mitigation licence will be required from Natural England to facilitate the proposed redevelopment of the barn. More information on bat mitigation licenses can be found [here](#).
- 6.1.6 Given the low number of bats and low conservation status of the bat roosts identified, the bat mitigation work could be managed by an experienced Natural England Bat Mitigation Class Licence (BMCL) Registered Consultant - more information on the BMCL can be found [here](#).
- 6.1.7 In determining whether to grant any EPS derogation licence Natural England will need to be satisfied that the redevelopment proposals satisfy the ‘Purpose Test’, the ‘NSA Test’ and the ‘FCS Test’ – see Section 2.1. A ‘Reasoned Statement’ from the developer is likely to be required with the licence application to satisfy both the ‘Purpose Test’ and the ‘NSA Test’.
- 6.1.8 Planning consent must usually be in place (with all relevant wildlife conditions discharged) before a mitigation licence can be acquired from Natural England or a site can be registered under a BMCL. Natural England usually charge for processing and administering licenses issued to facilitate development.
- 6.1.9 The licensed renovations of the building should be programmed for April through October to reduce the risk of disturbing bats during their winter hibernation, when low temperatures and scarcity of insect prey exacerbates the impacts of disturbance on welfare. The licensed mitigation strategy for the works will also need to ensure that no bats are harmed during the renovations, with work in areas of high risk to bats attended by the Named Ecologist or Registered Consultant on the licence (or their Accredited Agent).
- 6.1.10 The desk-study undertaken to inform the field surveys returned information on one EPSM licence issued c.1 km from the site, which covered the period 7 October 2009 to 30 April 2010 and permitted the destruction of a breeding site for common pipistrelle. There is no likelihood that this action licensed over ten years ago will have any residual effect on the common pipistrelle that roosts in the barn.

- 6.1.11 In order to provide an overall net gain for biodiversity post-development, in line with current planning policy (see Section 2.3), it is highly recommended that bat roosting and bird nesting habitat is incorporated into the proposals for this site.
- 6.1.12 Given the presence of *two* bat roosts on the site currently, it is recommended that *three* bat bricks or tiles are provided on the site to deliver an overall net gain in available roost habitat for bats. These bat bricks or tiles should be suitable for Pipistrelle bats and brown long-eared bats. They should also be incorporated into the design and fabric of the renovated barn to ensure that bat roost habitat is retained on the site in perpetuity.
- 6.1.13 At least two bird nest boxes should be incorporated into the design of the site to provide a net gain for this taxa. These should preferably be suitable for at least one of the 'garden' bird species which are listed as a Species of Principal Importance under the NERC Act, 2006 (see Section 2.3) i.e. house sparrow *Passer domesticus*, starling *Sturnus vulgaris*, or dunnock *Prunella modularis*.
- 6.1.14 Any bat or bird refugia installed on the site should be located in areas of darkness and away from regular disturbance (including from pets), and be positioned at a height of at least 3 m.
- 6.1.15 Finally, in reference to paragraph 5.1.4, if the proposed renovations of this building have not commenced within two years of the date of this report then it is recommended that an updated ecological assessment should be undertaken before any such work proceeds.

Appendix 1: Photographs

Photograph 1: There are small gaps beneath and between many of the interlocking pantiles covering both elevations of the pitched roof (including below the eaves and above the wall plate, not shown). There are also some small cracks and crevices associated with the bedding mortar below the ridge tiles. Such apertures could potentially be exploited by small bats to access or egress roosts – also see Appendix 2, TN 1 and TN 2.



Photograph 2: There are a small number of apertures in the brickwork of the barn including where mortar is missing. A common pipistrelle emerged from such a feature – see yellow arrow - on the dusk emergence survey conducted on 18 August 2020 – see Appendix 2, TN 3.

This photograph also shows the door on the southern elevation of the building, which is left open and therefore provides ready access for bats into the barn interior. A brown long-eared bat was recorded accessing the building via this door on the first nocturnal survey conducted on 17 July 2020 – see Appendix 2, TN 4.



Photograph 3: There are a few subsidence cracks in the brickwork of the barn, including this one above the rear (north-facing) door. There are also small gaps which are accessible for small bats around the doors – also see Appendix 2, TN 5 and TN 6.



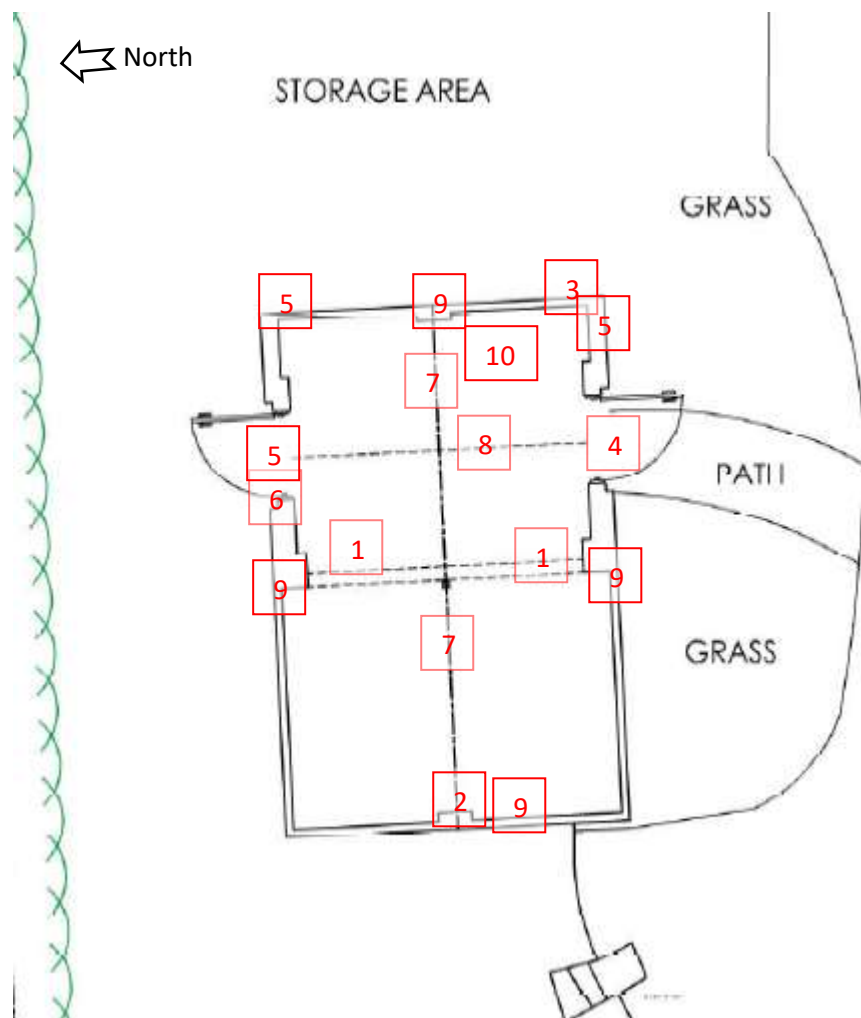
Photograph 4: A single wing from a large yellow underwing moth was present on the floor inside the barn – see Appendix 2, TN 10. These moths are a favoured prey item of the brown long-eared bat and the discarded wings of this moth can often indicate the presence of a feeding roost for this bat species.



Photograph 5: Inside the building there are a few features where individual or low numbers of bats could conceivably roost. These principally comprise the central ridge board and recesses where roof timbers join, small fissures within main beams, and apertures on the tops of walls. Some examples of these features are shown by the arrows on this photograph taken facing the eastern gable – see Appendix 2, TN 7, TN 8 and TN9.



Appendix 2: Annotated Plan



Target Notes (TN) showing approximate locations of features that could potentially be exploited by roosting bats

TN 1 – There are small gaps beneath and between many of the interlocking pantiles covering both elevations of the pitched roof, including below the eaves and above the wall plate e.g. Appendix 1, Photograph 1.

TN 2 – There are a few small cracks and crevices associated with the bedding mortar below the ridge tiles e.g. Appendix 1, Photograph 1.

TN 3 - There are a small number of apertures in the brickwork of the barn including where mortar is missing. A common pipistrelle emerged from such a feature on the dusk emergence survey conducted on 18 August 2020 – also see Appendix 1, Photograph 2.

TN 4 - A brown long-eared bat was recorded entering the barn via the open doorway here on the nocturnal survey on 17 July 2020 – see Photograph 4.1 and Appendix 1, Photograph 2.

TN 5 – There are a few subsidence cracks in the brickwork of the barn, including above the rear (north-facing) door – also see Appendix 1, Photograph 3.

TN 6 – There are also small gaps which are accessible for small bats around both doors, although the south-facing door is left open – also see Appendix 1, Photographs 2 and 3.

Inside the building there are a few features where individual or low numbers of bats could conceivably roost. These principally comprise the central ridge board and recesses where roof timbers join (e.g. **TN 7**), small fissures within larger beams (e.g. **TN 8**), and apertures on the tops of walls (e.g. **TN 9**) – see Appendix 1, Photograph 5.

TN 10 – Location of wing from large yellow underwing moth on the floor inside the barn (a sign of brown long-eared bat feeding activity) – see Appendix 1, Photograph 4.

Base plan provided by The Art of Building Ltd.

Appendix 3: Nocturnal Survey Results

Table 3.1: Bat activity detected from the north-east corner of the surveyed building during the dusk emergence survey on 17 July 2020.

Date and Time	Species
17/07/2020 21:37	Common pipistrelle
17/07/2020 21:37	Common pipistrelle
17/07/2020 21:39	Common pipistrelle
17/07/2020 21:46	Common pipistrelle
17/07/2020 21:47	Common pipistrelle
17/07/2020 21:47	Common pipistrelle
17/07/2020 21:50	Common pipistrelle
17/07/2020 21:50	Common pipistrelle
17/07/2020 21:50	Common pipistrelle
17/07/2020 21:50	Common pipistrelle
17/07/2020 21:50	Common pipistrelle
17/07/2020 21:50	Common pipistrelle
17/07/2020 21:51	Common pipistrelle
17/07/2020 21:51	Common pipistrelle
17/07/2020 21:52	Common pipistrelle
17/07/2020 21:52	Common pipistrelle
17/07/2020 21:53	Common pipistrelle
17/07/2020 21:54	Common pipistrelle
17/07/2020 21:54	Common pipistrelle
17/07/2020 21:54	Common pipistrelle
17/07/2020 21:54	Common pipistrelle
17/07/2020 21:55	Common pipistrelle
17/07/2020 21:55	Common pipistrelle
17/07/2020 21:55	Common pipistrelle
17/07/2020 21:55	Common pipistrelle
17/07/2020 21:56	Common pipistrelle
17/07/2020 21:56	Common pipistrelle
17/07/2020 21:56	Common pipistrelle
17/07/2020 21:56	Soprano pipistrelle
17/07/2020 21:58	Soprano pipistrelle
17/07/2020 21:59	Soprano pipistrelle
17/07/2020 22:00	Common pipistrelle
17/07/2020 22:00	Common pipistrelle
17/07/2020 22:01	Common pipistrelle
17/07/2020 22:04	Common pipistrelle
17/07/2020 22:05	Common pipistrelle
17/07/2020 22:05	Common pipistrelle
17/07/2020 22:05	Common pipistrelle

Table 3.2: Bat activity detected from the south-west corner of the surveyed building during the dusk emergence survey on 17 July 2020.

Date and Time	Species
17/07/2020 21:46	Common pipistrelle
17/07/2020 21:52	Common pipistrelle
17/07/2020 21:54	Soprano pipistrelle
17/07/2020 21:56	Common pipistrelle
17/07/2020 21:56	Common pipistrelle
17/07/2020 21:56	Common pipistrelle
17/07/2020 21:56	Soprano pipistrelle
17/07/2020 22:00	Common pipistrelle
17/07/2020 22:02	Brown long-eared bat
17/07/2020 22:05	Common pipistrelle
17/07/2020 22:10	Common pipistrelle
17/07/2020 22:11	Common pipistrelle
17/07/2020 22:21	Common pipistrelle
17/07/2020 22:21	Brown long-eared bat
17/07/2020 22:31	Soprano pipistrelle
17/07/2020 22:44	Soprano pipistrelle
17/07/2020 22:45	Common pipistrelle

17/07/2020 22:06	Common pipistrelle
17/07/2020 22:07	Common pipistrelle
17/07/2020 22:08	Common pipistrelle
17/07/2020 22:11	Common pipistrelle
17/07/2020 22:11	Common pipistrelle
17/07/2020 22:21	Common pipistrelle
17/07/2020 22:31	Soprano pipistrelle
17/07/2020 22:31	Soprano pipistrelle
17/07/2020 22:44	Soprano pipistrelle

Note that the number of registrations above does not correlate to the number of bats present. Also note that some bats, particularly loud echolocating species such as noctule, may have been recorded simultaneously on more than one detector.

Table 3.3: Bat activity detected from the southern elevation of the surveyed building during the pre-dawn re-entry survey on 30 July 2020.

Date and Time	Species
30/07/2020 03:27	Common pipistrelle
30/07/2020 03:27	Common pipistrelle
30/07/2020 03:27	Common pipistrelle
30/07/2020 03:37	Common pipistrelle
30/07/2020 03:42	Common pipistrelle
30/07/2020 03:46	Common pipistrelle
30/07/2020 04:03	Common pipistrelle
30/07/2020 04:04	Common pipistrelle
30/07/2020 04:04	Common pipistrelle
30/07/2020 04:08	Common pipistrelle
30/07/2020 04:08	Common pipistrelle
30/07/2020 04:16	Common pipistrelle
30/07/2020 04:33	Common pipistrelle
30/07/2020 04:33	Common pipistrelle
30/07/2020 04:34	Common pipistrelle
30/07/2020 04:36	Common pipistrelle
30/07/2020 04:36	Common pipistrelle
30/07/2020 04:39	Common pipistrelle

Note that the number of registrations above does not correlate to the number of bats present. An automated bat detector was also deployed inside the barn on this survey; however, no bat activity was detected by this unit.

Table 3.4: Bat activity detected from the north-east corner of the surveyed building during the dusk emergence survey on 18 August 2020.

Date and Time	Species
18/08/2020 20:45	Common pipistrelle
18/08/2020 20:45	Common pipistrelle
18/08/2020 20:45	Common pipistrelle
18/08/2020 20:45	Common pipistrelle

Table 3.5: Bat activity detected from the south-west corner of the surveyed building during the dusk emergence survey on 18 August 2020.

Date and Time	Species
18/08/2020 20:44	Common pipistrelle
18/08/2020 20:45	Soprano pipistrelle
18/08/2020 20:45	Common pipistrelle
18/08/2020 20:46	Common pipistrelle

18/08/2020 21:58	Soprano pipistrelle	18/08/2020 21:44	Common pipistrelle
18/08/2020 21:58	Common pipistrelle	18/08/2020 21:45	Common pipistrelle
18/08/2020 21:59	Common pipistrelle	18/08/2020 21:45	Noctule
18/08/2020 21:59	Common pipistrelle	18/08/2020 21:45	Noctule
18/08/2020 21:59	Common pipistrelle	18/08/2020 21:46	Common pipistrelle
18/08/2020 21:59	Common pipistrelle	18/08/2020 21:46	Common pipistrelle
18/08/2020 22:00	Common pipistrelle	18/08/2020 21:46	Common pipistrelle
18/08/2020 22:01	Common pipistrelle	18/08/2020 21:47	Common pipistrelle
18/08/2020 22:01	Common pipistrelle	18/08/2020 21:47	Common pipistrelle
18/08/2020 22:02	Common pipistrelle	18/08/2020 21:50	Common pipistrelle
18/08/2020 22:02	Common pipistrelle	18/08/2020 21:52	Common pipistrelle
18/08/2020 22:02	Common pipistrelle	18/08/2020 21:52	Common pipistrelle
18/08/2020 22:02	Common pipistrelle	18/08/2020 21:52	Noctule
18/08/2020 22:03	Common pipistrelle	18/08/2020 21:57	Soprano pipistrelle
18/08/2020 22:04	Common pipistrelle	18/08/2020 21:57	Common pipistrelle
18/08/2020 22:04	Common pipistrelle	18/08/2020 21:58	Common pipistrelle
18/08/2020 22:05	Common pipistrelle	18/08/2020 21:58	Common pipistrelle
18/08/2020 22:05	Common pipistrelle	18/08/2020 21:58	Common pipistrelle
18/08/2020 22:06	Common pipistrelle	18/08/2020 21:58	Common pipistrelle
18/08/2020 22:07	Common pipistrelle	18/08/2020 21:59	Common pipistrelle
18/08/2020 22:07	Common pipistrelle	18/08/2020 21:59	Common pipistrelle
18/08/2020 22:07	Common pipistrelle	18/08/2020 21:59	Common pipistrelle
18/08/2020 22:08	Noctule	18/08/2020 21:59	Common pipistrelle
18/08/2020 22:08	Common pipistrelle	18/08/2020 21:59	Common pipistrelle
18/08/2020 22:09	Common pipistrelle	18/08/2020 21:59	Common pipistrelle
18/08/2020 22:09	Common pipistrelle	18/08/2020 21:59	Common pipistrelle
		18/08/2020 21:59	Common pipistrelle
		18/08/2020 21:59	Common pipistrelle
		18/08/2020 22:00	Common pipistrelle
		18/08/2020 22:00	Common pipistrelle
		18/08/2020 22:00	Common pipistrelle
		18/08/2020 22:00	Common pipistrelle
		18/08/2020 22:00	Common pipistrelle
		18/08/2020 22:01	Common pipistrelle
		18/08/2020 22:01	Common pipistrelle
		18/08/2020 22:01	Common pipistrelle
		18/08/2020 22:02	Noctule
		18/08/2020 22:02	Common pipistrelle
		18/08/2020 22:02	Common pipistrelle
		18/08/2020 22:02	Common pipistrelle
		18/08/2020 22:02	Noctule
		18/08/2020 22:02	Noctule
		18/08/2020 22:02	Common pipistrelle

Note that the number of registrations above does not correlate to the number of bats present. Also note that some bats, particularly loud echolocating species such as noctule, may have been recorded simultaneously on more than one detector. An automated bat detector was also deployed inside the barn on this survey; however, no bat activity was detected by this unit.

END OF REPORT

